

The results of The role of the bicycle as an egress and access mode for multimodal nodes

The bike has a very important role in multi-modal chains involving transit in the Netherlands, for example accounting for some 45% of all access travel to train stations and 11% of all egress travel, while showing consistent and significant growth during the last 15 years. While the bike system thus acts as a key mode that accompanies transit usage – and the other way round, we lack fundamental understanding on how these travel modes extend and complement each other. This research has provided a framework for analysing combined bike-transit usage that conceptually explains why and under which conditions the combination is successful. We have identified three main characteristics that require combined bike-transit usage to be analysed as a distinct transport system; a) the integration of heterogeneous but complementary transport systems, b) the high degree of relevant, heterogeneous and dynamic choice offered and c) the high impact of the system, either factual or potential. The case of the Netherlands has been used to illustrate these characteristics and discuss their implications for research and practice.

Complementary transport systems

Key to the success of combined usage of bikes and transit is that they are complementary to a high degree. Bikes perform at their best when distances tend to be small, while transit (and especially trains) is at its best when distances are large. Conversely, transit services are much more bounded in space and time, while the bike (within the limits of a smaller spatial reach) offers much greater flexibility in both respects. Together, they engender a system which is both fast and flexible, and is fully competitive with the car, which does not apply to each of them separately.

High degree of choice

Analysis of the Dutch bike-transit system reveals that there exists a high degree of choice in the way the system can be used - and indeed is used. The additional option of using a bike in many cases allows for using a more distant access station at a comparatively small cost in terms of extra travel distance and time, in particular within or around urban centres. Given the strong natural hierarchy by which transit systems are organised, the variety of (objective or subjective) quality offered by alternative transit services, cycle route options or station facilities, this extra cycling distance and time might well pay off. The resulting choice of travel options shows quite heterogeneous, which effectively makes that the bike functions as a means to soften the rigid structure of the transit system and adapt it to highly individual or circumstantial travel needs. Conversely, transit acts as an add-up or a sort of ‘accelerator’ to the bike, greatly extending its spatial reach.

High impact

The case of the Netherlands shows that the above is not just theory but is already having a high impact on the integrated land-use/transport system. First, combined usage of bikes and transit accounts for a significant share of all person-kms travelled in the Netherlands. Second, the system has shown consistent and substantial growth for the last 15 years, much unlike competing transport systems. Finally, the system is considered to have considerable growth potential at comparatively little expense and limited environmental and social impacts, especially in urban areas. This leads us to conclude that bike-transit both should and could be considered the backbone of future metropolitan transport systems. And that, at the very least, this option should be very seriously explored.